## CLAIMS

1. A recording method, comprising the steps of:

(a) generating a plurality of pulse sequences corresponding to a plurality of linear velocities;

(b) while rotating a recording medium with a linear velocity selected from the plurality of linear velocities, forming at least one of a recording mark and a space by irradiating the recording medium with a pulse sequence selected from the plurality of pulse sequences, the pulse sequence corresponding to the linear velocity,

wherein the step (a) comprises the steps of:

(a-1) measuring at least one first recording parameter corresponding to at least one linear velocity selected from the plurality of linear velocities;

(a-2) determining a second recording parameter corresponding to the plurality of linear velocities based on the at least one first recording parameter measured; and

(a-3) generating the plurality of pulse sequences corresponding to the plurality of linear velocities based on the second recording parameter measured.

2. A recording method according to claim 1, wherein the step (a-1) comprises the step of:

measuring the at least one first recording parameter by performing recording parameter learning for learning a recording parameter corresponding to a pulse sequence, wherein the pulse sequence is used for forming a desired recording mark onto the recording medium.

3. A recording method according to claim 2, wherein:

each of the plurality of pulse sequences comprises

a starting pulse and a terminating pulse, the starting pulse being provided at a beginning thereof and the terminating pulse being provided at the end thereof;

the starting pulse is used for forming a starting portion of the recording mark;

the terminating pulse is used for forming a terminating portion of the recording mark;

the second recording parameter indicates a recording power level of each of the plurality of pulse sequences, a recording power level coefficient for determining a recording power level of each of the plurality of pulse sequences, a position of the starting pulse of each of the plurality of pulse sequences, and a position of the terminating pulse of each of the plurality of pulse sequences.

4. A recording method according to claim 1, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity; and

the at least one linear velocity is the first linear velocity va.

5. A recording method according to claim 1, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity; and

the at least one linear velocity is the second linear velocity vb.

6. A recording method according to claim 1, wherein:

the plurality of linear velocities are linear

velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity; and

the at least one linear velocity is (va+vb)/2.

7. A recording method according to claim 1, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity;

the at least one linear velocity is a linear velocity v1 and a linear velocity v2; and

the first linear velocity va, the second linear velocity vb, the linear velocity v1, and the linear velocity v2 have a relationship $va \leq v1 < v2 \leq vb$.

8. A recording method according to claim 1, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity; and

the at least one linear velocity is a first linear velocity va and a second linear velocity vb.

9. A recording method according to claim 1, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity;

the at least one linear velocity is a linear velocity v1, a linear velocity v2, and a linear velocity v3; and

the first linear velocity va, the second linear velocity vb, the linear velocity v1, the linear velocity

v2, and the linear velocity v3 have a relationship $va \leq v1 < v2 < v3 \leq vb$.

10. A recording method according to claim 1, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity;

the at least one linear velocity is a first linear velocity va, a second linear velocity vb, and a third linear velocity vc; and

the first linear velocity va, the second linear velocity vb, and the third linear velocity vc have a relationship $vc=(va+vb)/2$.

11. A recording method according to claim 1, wherein the step (a-2) comprises the steps of:

determining a fourth recording parameter corresponding to the plurality of linear velocities based on at least one third recording parameter recorded on the recording medium; and

determining the second parameter based on the at least one first recording parameter measured and the fourth recording parameter.

12. A recording method according to claim 11, wherein the first recording parameter, the second recording parameter, the third recording parameter, and the fourth recording parameter have a relationship represented by:

$$g(v)=f(v)+PMv1-f(v1)+Adj(v),$$

where:

v represents the plurality of linear velocities;

v1 represents a linear velocity corresponding to one of the at least one third recording parameter;

g(v) represents the second recording parameter corresponding to the plurality of linear velocities;

f(v) represents the fourth recording parameter corresponding to the plurality of linear velocities;

PMv1 represents the first recording parameter; and

Adj(v) represents an adjustment value corresponding to the plurality of linear velocities.

13. A recording method according to claim 12, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity;

the at least one third recording parameter is a recording parameter corresponding to a linear velocity v1 of the plurality of linear velocities and a recording parameter corresponding to a linear velocity v2 of the plurality of linear velocities; and

the first linear velocity va, the second linear velocity vb, the linear velocity v1, and the linear velocity v2 have a relationship $va \leq v1 < v2 \leq vb$.

14. A recording method according to claim 12, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity; and

the at least one third recording parameter is a recording parameter corresponding to the first linear velocity va and a recording parameter corresponding to the

second linear velocity vb.

15. A recording method according to claim 12, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity;

the at least one third recording parameter is a recording parameter corresponding to a linear velocity v1 of the plurality of linear velocities, a recording parameter corresponding to a linear velocity v2 of the plurality of linear velocities, and a recording parameter corresponding to a linear velocity v3 of the plurality of linear velocities; and

the first linear velocity va, the second linear velocity vb, the linear velocity v1, the linear velocity v2, and the linear velocity v3 have a relationship $va \leq v1 < v2 < v3 \leq vb$.

16. A recording method according to claim 12, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity;

the at least one third recording parameter is a recording parameter corresponding to the first linear velocity va, a recording parameter corresponding to the second linear velocity vb, and a recording parameter corresponding to a linear velocity vc of the plurality of linear velocities; and

the first linear velocity va, the second linear velocity vb, and the third linear velocity vc have a relationship $vc=(va+vb)/2$.

17. A recording method according to claim 12, wherein f(v) is a linear function or a quadratic function.

18. A recording method according to claim 12, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity;

the at least one third recording parameter is a recording parameter PCv1 corresponding to a linear velocity v1 of the plurality of linear velocities and a recording parameter PCv2 corresponding to a linear velocity v2 of the plurality of linear velocities; and

the following relationship is satisfied:

$va \leq v1 < v2 \leq vb$,

$f(v)=\alpha \cdot (v-v1)+PCv1$, and

$\alpha=(PCv2-PCv1)/(v2-v1)$.

19. A recording method according to claim 12, where the at least one third recording parameter is selected based on an identification code recorded on the recording medium.

20. A recording method according to claim 1, wherein:

the at least one linear velocity of the plurality of linear velocities is at least one linear velocity corresponding to at least one third recording parameter; and

the step (a-2) comprises the step of determining a second recording parameter h(v) corresponding to the plurality of linear velocities v based on the at least one first recording parameter measured.

21. A recording method according to claim 20, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity;

at least one linear velocity of the plurality of linear velocities is a linear velocity v1 and a linear velocity v2; and

the first linear velocity va, the second linear velocity vb, the linear velocity v1, and the linear velocity v2 have a relationship $va \leq v1 < v2 \leq vb$.

22. A recording method according to claim 20, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity; and

at least one linear velocity of the plurality of linear velocities is the first linear velocity va and the second linear velocity vb.

23. A recording method according to claim 20, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity;

at least one linear velocity of the plurality of linear velocities is a linear velocity v1, a linear velocity v2, and a linear velocity v3; and

the first linear velocity va, the second linear velocity vb, the linear velocity v1, the linear velocity v2, and the linear velocity v3 have a relationship

$va \leq v1 < v2 < v3 \leq vb$.

24. A recording method according to claim 20, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity;

at least one linear velocity of the plurality of linear velocities is the first linear velocity va, the second linear velocity vb, and the linear velocity vc; and

the first linear velocity va, the second linear velocity vb, and the third linear velocity vc have a relationship $vc=(va+vb)/2$.

25. A recording method according to claim 20, wherein h(v) is a linear function or a quadratic function.

26. A recording method according to claim 20, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity;

the at least one first recording parameter is a recording parameter PMv1 corresponding to a linear velocity v1 of the plurality of linear velocities and a recording parameter PMv2 corresponding a linear velocity v2 of the plurality of linear velocities; and

the following relationship is satisfied:

$va \leq v1 < v2 \leq vb$,

$h(v)=\beta \cdot (v-va)+PMv1$, and

$\beta=(PMv2-PMv1)/(v2-v1)$.

27. A recording method according to claim 20, wherein the at least one third recording parameter is selected based on an identification code recorded on the recording medium.

28. A recording method according to claim 3, wherein:

the recording power level coefficient is at least one of a coefficient for determining an erase power level of an erase pulse forming the space based on a peak power level of a peak pulse contained in a pulse sequence, and a coefficient for determining a bias power level of a bias pulse forming the recording mark based on the peak power level of the peak pulse contained in the pulse sequence; and

the bias power level is between the peak power level and the erase power level.

29. A recording method according to claim 12, wherein:

each of the plurality of pulse sequences comprises a starting pulse and a terminating pulse, the starting pulse being provided at a beginning thereof and the terminating pulse being provided at the end thereof;

the recording mark is a shortest recording mark;

the starting pulse and the terminating pulse are pulses forming the shortest recording mark; and

Adj(v) is determined based on a position of at least one of the starting pulse and the terminating pulse.

30. A recording medium for recording information, wherein:

at least one of a recording mark and a space is formed on the recording medium by, while rotating the recording medium with a linear velocity selected from the plurality of linear velocities, irradiating the recording medium with a pulse sequence selected from the plurality of pulse

sequences, the pulse sequence corresponding to the linear velocity;

the plurality of pulse sequences correspond to the plurality of linear velocities;

at least one first recording parameter corresponding to at least one linear velocity of the plurality of linear velocities is measured;

a fourth recording parameter corresponding to the plurality of linear velocities is determined based on at least one third recording parameter recorded on the recording medium;

a second parameter is determined based on the at least one first recording parameter measured and the fourth recording parameter;

the plurality of pulse sequences corresponding to the plurality of linear velocities are generated based on the determined second recording parameter;

the recording medium has a region, in which the third recording parameter is recorded;

the first recording parameter, the second recording parameter, the third recording parameter, and the fourth recording parameter have a relationship represented by:

$$g(v)=f(v)+PMv1-f(v1)+Adj(v)$$

where:

v represents the plurality of linear velocities;

v1 represents a linear velocity corresponding to one of the at least one third recording parameter;

g(v) represents the second recording parameter corresponding to the plurality of linear velocities;

f(v) represents the fourth recording parameter corresponding to the plurality of linear velocities;

PMv1 represents the first recording parameter; and

Adj(v) represents an adjustment value corresponding to the plurality of linear velocities.

31. A recording medium for recording information, wherein:

at least one of a recording mark and a space is formed on the recording medium by, while rotating the recording medium with a linear velocity selected from the plurality of linear velocities, irradiating the recording medium with a pulse sequence selected from the plurality of pulse sequences, the pulse sequence corresponding to the linear velocity;

the plurality of pulse sequences correspond to the plurality of linear velocities;

at least one first recording parameter corresponding to at least one linear velocity of the plurality of linear velocities is measured;

at least one linear velocity of the plurality of linear velocities is at least one linear velocity corresponding to at least one third recording parameter recorded on the recording medium;

a second recording parameter corresponding to the plurality of linear velocities is determined based on the at least one first recording parameter measured;

the plurality of pulse sequences corresponding to the plurality of linear velocities are generated based on the second recording parameter measured; and

the recording medium has a region, in which the third recording parameter is recorded.

32. A recording medium according to claim 30, wherein the recording medium has a region, in which an identification code for selecting the at least one third recording parameter

is recorded.

33. A recording medium according to claim 31, wherein the recording medium has a region, in which an identification code for selecting the at least one third recording parameter is recorded.

34. A recording apparatus, comprising:

means for generating a plurality of pulse sequences corresponding to a plurality of linear velocities;

means for, while rotating a recording medium with a linear velocity selected from the plurality of linear velocities, forming at least one of a recording mark and a space by irradiating the recording medium with a pulse sequence selected from the plurality of pulse sequences, the pulse sequence corresponding to the linear velocity,

wherein the forming means comprises:

means for measuring at least one first recording parameter corresponding to at least one linear velocity selected from the plurality of linear velocities;

means for determining a second recording parameter corresponding to the plurality of linear velocities based on the at least one first recording parameter measured; and

means for generating the plurality of pulse sequences corresponding to the plurality of linear velocities based on the second recording parameter measured.

35. A recording apparatus according to claim 34, wherein:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity; and

the at least one linear velocity is a first linear velocity va and a second linear velocity vb.

36. A recording apparatus according to claim 34, wherein:

at least one linear velocity of the plurality of linear velocities is at least one linear velocity corresponding to at least one third recording parameter recorded on the recording medium;

the second recording parameter determining means determines a second recording parameter h(v) corresponding to the plurality of linear velocities v based on the at least one first recording parameter measured;

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity;

at least one linear velocity of the plurality of linear velocities corresponding to the at least one third recording parameter is a linear velocity v1 and a linear velocity v2; and

the first linear velocity va, the second linear velocity vb, the linear velocity v1, and the linear velocity v2 have a relationship $va \leq v1 < v2 \leq vb$.

37. A recording apparatus according to claim 34, wherein:

at least one linear velocity of the plurality of linear velocities is at least one linear velocity corresponding to at least one third recording parameter recorded on the recording medium;

the second recording parameter determining means determines a second recording parameter h(v) corresponding to the plurality of linear velocities v based on the at least one first recording parameter measured;

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity; and

the at least one linear velocity corresponding to the at least one third recording parameter is the first linear velocity va and the second linear velocity vb.

38. A recording apparatus according to claim 34, wherein:

at least one linear velocity of the plurality of linear velocities is at least one linear velocity corresponding to at least one third recording parameter recorded on the recording medium;

the second recording parameter determining means determines a second recording parameter h(v) corresponding to the plurality of linear velocities v based on the at least one first recording parameter measured; and

h(v) is a linear function or a quadratic function.

39. A recording apparatus according to claim 34, wherein:

at least one linear velocity of the plurality of linear velocities is at least one linear velocity corresponding to at least one third recording parameter recorded on the recording medium;

the second recording parameter determining means determines a second recording parameter h(v) corresponding to the plurality of linear velocities v based on the at least one first recording parameter measured;

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity va, which is a lowest linear velocity, to a second linear velocity vb, which is a highest linear velocity;

the at least one first recording parameter is a

recording parameter PMv1 corresponding to a linear velocity v1 of the plurality of linear velocities and a recording parameter PMv2 corresponding a linear velocity v2 of the plurality of linear velocities; and

the following relationship is satisfied:

$va \leq v1 < v2 \leq vb$,

$h(v)=\beta \cdot (v-va)+PMv1$, and

$\beta=(PMv2-PMv1)/(v2-v1)$.